

AN ANALYSIS OF THE CONSTRAINTS OF POLICY FRAMEWORK FOR PHYSICAL PLANNING IN A CHANGING CLIMATE IN NIGERIA

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ABSTRACT

This paper analyzed the constraints of environmental policy frameworks in the context of integration of climate change mitigation and adaptation in Nigeria. It revealed that though there are adequate and sufficient environmental laws in Nigeria, they still left a gap to be filled in the context of climate change challenges. A table of findings relating to the constraints of policy frameworks has been presented explaining the problems at the various levels of physical planning and development. The paper also presented a matrix of recommendations on the basis of mitigation and adaptation measures, concluding that the proposed Operative National Physical Plan is the framework that may form the basis of coordinating all environmental planning policies and has the needed potential for the integration of mitigation and adaptation into physical planning and development.

KEYWORDS: Physical Planning, Climate Change, Mitigation and Adaptation

INTRODUCTION

There is a global consensus that climate change exists in reality, and is here to stay. The response to climate change is connected to the question of survival of human beings, as one of the life forms on earth. This planet is influenced by celestial events in space, the solar system and also through human impact (Onyenechere, 2010). The current change in the climate of the globe is substantially anthropogenic, that is, it is induced or caused by human activity and events in the course of development. It is stated that anthropogenic climate change 'is likely to continue for many centuries, changing human and animal life patterns (Blakely, 2007)'. There is a compelling need to adapt to the sudden and unpredictable weather events, produce measures to reduce global warming; and evolve strategies to cope with daily living under increasing rise in temperature, severe rainfall, drought, and other observed ecological changes.

Physical planning, in its wider definition as the deliberate arrangement of land use elements and activities on space for the purpose of achieving defined societal objectives; has a role to play in the evolution of measures and strategies for sustainable living and for the maintenance of standard livelihood. Nigeria has made tremendous developmental progress in urbanization, agriculture and industrial development at various geographical scales, ranging from the regional to the local neighborhood. But Nigeria has also experienced the negative externality of development, for example, the destruction of natural habitats through urbanization, deforestation, refuse waste disposal, industrial pollution, gas flaring, oil spills, gully erosion, rapid migration and depletion of forest resources. All of the developmental activities of Nigeria have added to the problem of anthropogenic climate change.

The solution to the problems of climate change will stand as a challenge to Nigerian planners and other environmental disciplines to confront and control, if sustainable livelihood is to be maintained. However the solution

requires a paradigm shift in institutional attitudes and planning environments. Nigerian policy acknowledge that human actions are causal of changes and that the technical scope to solutions needs to be innovative and widely collaborative at the international and the various national levels. In Nigeria, climate change is acknowledged within the central government bureaucracy, especially with the creation of a climate change unit in the Federal Ministry of Environment. But in the context of perception of changing climate little has been consolidated nationwide. And much less was done to adapt to the culture of solving the problem. What exists is the culture of environmental consciousness cultivated within government departments and through laws on environmental optimization and protection. Some of these laws were enacted and operated since the colonial times. They were not enacted with climate change challenges in mind.

The problem is that there is no integrated intervention framework within which physical planning can contribute to tackling the problems of human impact of climate change on the environment. Having such a framework is critical especially since Nigerian environmental policies are articulated in spatial terms whereby political and developmental territories coincide and overlap.

This paper seeks to analyze the missing gap in the environmental policy frameworks for the integration of climate change control as a physical planning concern in Nigeria. The aim of the paper is to analyze the constraints of various environmentally related policy frameworks with the view to suggest measures to integrate them towards meeting current challenges of coping with climate change.

Objectives of Paper

The objectives of this paper are therefore as follows:

- To examine the relationship between climate change and physical development in general, and specifically in Nigeria.
- Analyze the constraints of existing spatial and physical policy frameworks for environmental planning in Nigeria in the context of climate change mitigation and adaptation.
- Recommend physical planning and spatial strategies for mitigation and adaptation to climate change at various levels.

THE CURRENT POLICY FRAME FOR PHYSICAL PLANNING IN NIGERIA

The Global Impact of General Development on a Changing Climate

Human development has transformed the natural environment through the exploitation of natural resources that has resulted in the destruction of the soil, vegetation, ocean; the destruction of habitat of animal and plants leading to near extinction of many species. Notwithstanding, human destructive actions has impacted seriously on the planet's energy circulation system. The development activities of man has collectively and cumulatively led to observed climatic changes on a global scale with known attendant consequences on survival. A few examples of the consequences of negative human impact are global warming with associated increase in temperature, distortion of the planet's energy balance, green house warming, ozone depletion, polar ice melting, sea level rise, and severe unpredictable weather. Nigeria is one of the contributors of this phenomenon through severe flaring of gas from fossil oil exploitation and bush burning. In agriculture, a severe destruction of forest for farmlands and firewood led to desertification and became a cause for social instability occasioned by migration. The botany and wildlife are under severe threat from grazing and hunting. Constructions of

settlements and transportation highways have caused soil erosion and depletion of water resources.

Climate Change and Physical Planning

Several paradigms have explained the concepts and theories of our changing climatic conditions and the prediction that it may possibly lead to mass extinction of living beings in the world or threaten human survival at an existential level. These explanations range from the early principles of Gaia whereby planet earth may be viewed as a single interdependent organism (Thomas Lewis, 1995), to current models of climate change proposed with variant explanations, and at times denials of whether the causes are anthropogenic or not. In a sense most climate change theories accept that the role of human species has changed from a time of human ecological symbiosis, to that of an actor in the escalation of global warming and extinction of keystone and other species. However these theories also acknowledge the role conscious human effort could play in the survival of the planet in terms of regulation of the environment and protecting it from ecological collapse through intervention. Most climate change theories can therefore fit into physical planning methods since they have an instrumental value in providing the concepts and tools for protecting, sustaining and containing negative climate changes on the environment. In that respect;

- Physical planning is an agent of conscious change, where practitioners are placed to play the role of mediating interdependence of the overall planet survival system
- Physical planning can consciously define the proper status of human beings relative to the rest of the species and non-living beings critical to our survival.
- Physical planners can negotiate an acceptable energy consumption and carbon emissions levels desirable for an optimum balance in the environment.
- Physical planners can devise an appropriate trade off that would prevent a further environmental tipping point for survival through adaptation.

PHYSICAL PLANNING, MITIGATION AND ADAPTATION

There appears to be little research on the impact of climate change and how cities have responded through design in Nigeria, except in Lagos state where piece meal approach to saving coastal areas from the sea has been applied (Independent, 2013). What is recognized in Nigerian is that mitigation and adaptation measures are required and are inevitable.

Mitigation in the context of climate change are those actions taken in order to decrease the potential effects of global warming. These actions are necessary to prevent the catastrophic situations from reaching a tipping point, which may lead to an irreversible, possibly negative development. For example, severe forest loss leading to extinction of a keystone specie in the northern savannah. Carbon dioxide is the widely recognized cause of green House Gas (GHG). Therefore climate change mitigation involves reductions in the quantity of green house gases, either by reducing their sources or by removing them from the atmosphere through natural or man-made sequestration. Technically, 'mitigation assesses the scale of GHGs that could be made, relative to emissions baselines, for a given level of carbon price (UN-HABITAT, p3)'. It is hence an intervention strategy that can primarily be handled competently by central governments in Nigeria.

Adaptation strategies however aim to minimize the negative impact of current and future damage from changing climate attributed, like increased rainfall, drought, and other unusual severe weather events. Adaptation measures have direct links to social and economic development of a resource region. It may involve planning of settlements and catchment environments. Adaptation essentially involves 'initiatives and measures to reduce vulnerability of natural and human systems against actual and expected climate change effects (UN-HABITAT, op cit, p3).

Even though at the city level planning measures or control through development permits may predominate, at the national level most approaches combine physical planning inputs with sectoral objectives in mind. Approaches towards climate change mitigation and adaptations must therefore move beyond physical manipulation of space to spatial planning. This is whereby social, economic, ecological goals are interdependently integrated in the scheme to achieve mitigation and adaptation measures. Therefore, 'spatial planning can make a major contribution to tackling climate change by shaping new and existing developments in ways to reduce carbon dioxide emissions and at the same time, positively build community resilience to problems such as extreme heat or flood risk (Climate Change Coalition,2010, p.2)'

In other words, a set of general principles and actions must be evolved for the purpose of addressing mitigation and adaptation at various scales of resolutions, regional, urban and local. This must also include sectoral concerns. Aspects of climate change control are difficult to resolve using land use permit mechanisms alone, therefore, 'the reality of spatial planning will be built through the creation of regional spatial strategies and local development frameworks, and in the way that those tools are used in decision making (Nadin, 2007). That is because, the impacts of sectoral programs are located on space and consequently most climate impacts are local in nature. The merits of a spatial development policy are that sectoral and physical objectives could be integrated with those of climate change control.

THE CONSTRAINTS AND OPPORTUNITIES OF POLICY FRAMEWORK FOR PHYSICAL PLANNING IN NIGERIA

The policy frameworks for promotion and protection of environments are to a large extent in existence in Nigeria. They are derived from our legislations, institutional bodies and administrative practices. They further have huge potentials for the incorporation of climate change concerns into physical development. On the other hand these frameworks are hampered in various ways due to lack of clarity and coherence, jurisdictional duplication, lack of coordination and difficulty in the execution of objectives and programs. The most serious of the constraint is the lack of awareness and lack of will power political leaders. Some of the existing frameworks that would provide support and lay the foundation of a climate change impact mitigation strategy are outlined below with a preview of current challenges that need to be reviewed for an effective result and performance. Table 1 illustrates some of the constraints and prospects of regulatory instruments with potentials and constraints for integration of mitigation and adaptation measures in planning in Nigeria.

Global Treaties and Domestic Environmental Laws

Nigeria is not immune from the vagaries of climate change and its impacts. We are also active contributors to global carbon emissions, destruction of forest resources, and have driven wildlife close to extinction. The northern border of Nigeria is encroached annually by the desert. An irreparable damage has been initiated on the coastal areas of our oil-producing states and huge amount of garbage dumped into the sea.

These events have been noticed by the international community. The most significant climate treaty is the Kyoto Declaration. This treaty also known as the Earth Summit of 1992 was for the purpose of reducing greenhouse gas

emissions from the atmosphere so that the current weather severe events may not further escalate towards a tipping point. This milestone treaty was however jettisoned by some developed nations. It is now replaced by the Copenhagen Treaty of 2007 on terms more acceptable to majority of nations. Nigeria as a responsible member of the community will fulfill all her commitments with regards to emissions control with consequent demands on physical planning and resource expenditure. The extent to which the federal authorities would fulfill its global commitments and treaties is limited. Some social commitments like the Millennium Development Goals are yet to be fulfilled, let alone the more sophisticated GHGs control that requires constant contact with the private sector. The tenacity and success in meeting global commitments would depend on a committed President with a good team to follow up on all signed global treaties.

Domestically a number of laws relating to the environment are important tools in the regulation and control of planning in a changing climate. Some of them are listed here:

- **Constitution of the Federal Republic of Nigeria**
 - Section 20 requires Nigeria to ‘improve and protect the air, land, water, forest and wildlife’
 - Section 12 states that international treaties ratified to be treated as national law.
- **National Environmental Standards and Regulation Enforcement Agency Act, 2007.**
 - Replaces FEPA Act
 - Responsible for protection and sustainable development of the environment and its natural resources
- **Environmental Impact Assessment Act of 2004**
 - Requires report and approval of impact of environmental impact of public and private projects
 - Establishes cases where impact is required
- **Nigerian Urban and Regional Planning Act, 2004**
 - Defines development plans and development control
 - Defines responsibilities and jurisdictions of federal, state and local governments in the control of development
 - Directs for the production of a national physical plan for ‘securing integration, consistency and coherence within and between all levels of physical development plans’
- **Land Use Act**
 - Establishes land ownership and conditions of tenure
 - Procedure for acquisition and compensation for land
- **Endangered Species Act**
 - Wildlife management
- **River Basin Development Authority Act, 2004**

- Responsible for the development of water resources
- Control of floods and erosion
- **Water Resources Act, 2004**
 - developing and improving water quality and quantity
 - pollution prevention plan and regulations
 - protection of fisheries, flora and fauna
- **Federal National Parks Act, 2004**
 - 'Establishment of potential areas for resource conservation, water catchment protection, wildlife conservation'.
 - Maintenance of national ecosystem balance
- **Delta Development Commission Act, 2004**
 - Responsible to 'plan and implement projects for the sustainable development of the Delta in the field of transportation, health, agriculture, fisheries, urban and housing development.'

One example from the above that can be used to buttress the challenges of integration of climate change adaptations and mitigation is the River Basin Development Authority Act, 2004. The country was divided into eight ecologically operational areas for the purpose of agricultural development. The developmental goals are however overlaps in terms of objectives, territory and physical planning jurisdictions between the Federal and respective states. Yet there is little effective working relationship for coordination and synchronization of goals between the states and the federal centre.

Proposed Operative National Physical Plan

The Operative National Physical Plan (ONPP), is potentially a critical document that provides for a coordinated physical planning in Nigeria. The ONPP is the responsibility of the National Urban and Regional Planning Commission, vide Section 7 (b), 'which relegates the initiation, preparation, and implementation of the ONPP to the Commission. The Commission, after the preparations would then call for inputs from states, other Federal agencies and local governments'.

The ONPP has yet to come into existence, though some work has commenced on its production. But once it is implemented, it will provide a schematic view of all physical development activities in Nigeria. The process of evolving the ONPP is top-bottom rather than emanating from the grassroots. Even planners may find it elitist since its evolution would not be done on the basis of utilizing local knowledge, and understanding of subtle spatiality in the country. Nevertheless the ONPP has a great potential for incorporation of climate change parameters into planning principles for development. It would certainly provide the linkages between the sectoral aspirations of the Federal government and the regional and urban goals of the 36 states in Nigeria. The main concern is that the mandate is yet to produce any physical plan.

Master Plan and Development Control Practices

The Master plan remains the primary physical planning document in Nigeria. By the end of the 1970s virtually all urban areas had Master plans guiding implementation and development control. Most Master plans were produced by Consultants according to physical briefs by client state governments. Their production is top-bottom approach and the processes little involve directly the people in urban areas, the beneficiaries. The emphasis of most Master plans was on provision of land for residential, commercial, and other land use developments. The common feature of master planning therefore was on routine land use allocation to the detriment of other planning concerns, like defining the destiny and identity of cities or aesthetics, let alone the incorporation of emission issues. Across most of the states in Nigeria development control is weak and lacks a central theme and agenda. All the same master planning has the potentials for playing a positive role for climate change adaptation because it can precisely pin down the location of infrastructure, services, community facilities and social programs.

Table 1: Potential and Constraints of Physical Planning Frameworks for Climate Change Policy

Category of Framework	Potentials	Constraints
International treaties and environmental laws	Constitutional guarantee Internationally acceptable Sectoral relevance	Global politics determines success and agenda Weak on rights provision State/federal conflict of interests Weak on implementation Lacking political will and backing Lacking in spatial view
Operative National Physical Plan (ONPP)	May provide synergy and clarity Schematic view of national physical plan Assigns jurisdictions for projects	does not exist may be produced top-bottom lacking in local knowledge rigid and slow dynamics lacking in spatial view
Master plans	Familiar to planners Clarity on land use proposals Translatable into development components	Top down approach Dominated by land distribution Weak poorly motivated c/servants Poor capacity for progressive change Administrative problems

POSSIBLE DEVELOPMENT CONTROL AND CLIMATE CHANGE MEASURES AT VARIOUS LEVELS

While at the national and regional levels spatial planning is emphasized, at the local level physical measures could be more implementable for their technical legibility. At that level the physical goals of mitigation and adaptation are quantifiable and the relationship to other social and economic objectives clearer. Table 2 is presented as a demonstration of possible measures. The details and accuracy depends on a study of the situation and are therefore spatially specific.

Table 2: A Matrix of Mitigation and Adaptation Measures at Various Levels of Development

Spatial Level	Mitigation Intervention Measures	Adaptation Intervention Measures	Governance
National level	Constitutional laws and jurisdictions Defining GHG	Evolving the Operative National Physical Plan	Federal government with input and

	emission targets Research and mapping national GHG regions Define resource fragile areas Funding commitment and giving incentives	Making national adaptation policy Research on adaptation strategy on ecological zones Action plan/ policy for resource fragile regions Funding guidelines for compliance	consultations with International communities and state governments
Regional/ sub-regional levels	Ecological zone mapping of Climate constraints Regional settlement and transport plans Emission control plan	Evolving climate adaptation plans Spatial location policies and plans Regional strategy for allocation of GHG limits EIA control	Federal government with collaborations with state governments in consultations with communities
Urban level	Mapping of renewable resource, wind, solar etc. Identifying population priority-energy needs, renewable capacity. Identifying climate threat and planning	Creating impact adaptation plan green infrastructure, temperature, drought and heat control Proposing sustainable transport plan, walking, bicycle Adopting state building codes, Designing rural roads and routes	Primarily state government in coordination with local government and stakeholders
Neighborhood and built areas	Designing low energy demand layouts Site selection for GHG friendly impact Reducing vehicular travel through compact development Conserving ecologically fragile areas generous green strategy	Low carbon development zoning Policy on natural elements landforms, wind, and solar for temperature control Economization plan for water use Draft emergency climate for flooding, local disaster plans	Primarily state government with local governments and the grassroots community, NGOs and businesses.

CONCLUSIONS

Development is inevitable, but dealing with the impact of climate change is possible through mitigation and adaptation intervention measures. Physical planning intervention, if coordinated is capable of meeting this challenge for Nigeria. This is possible only if the various environmental intervention policy tools are integrated to be functional to co-opt mitigation and adaptation strategy in a concerted manner between the States and the Federal Government. The Operational

National Physical Plan is primarily central in ensuring all programs with sectoral and physical inputs are concertedly implemented in Nigeria on account of its schematic view of a National Physical Plan capable of tackling climate change adaptation action. However, incentives are necessary on part of the federal government in the context of mitigation, and consultation and trade off is necessary on the parts of state governments when dealing with industry, local government and community stakeholders in the enactment of zoning regulations.

Finally, the definition and scope of physical planning must change when dealing with incorporation of climate change challenges. Sectoral inputs must equally be made spatially relevant and plans must differ regionally on the basis of difference in geography, ecology, economy and level of development and climate change impact and disaster scenarios or control in Nigeria.

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